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(54) Horticultural propagation tray

(57) Multi-cell propagating tray is a unitary plastics moulding, each cell (10) being shaped as a downwardly tapered conical pot (12) whose major lower portion is of circular cross-section with a square uppermost rim (16) and an upper portion or mouth (18) in the form of a shallow dished downward transition from the square rim to the circular section lower portion, the rims being of uniform width and common to adjoining cells so as to form a rectangular grid or lattice locating the cells.

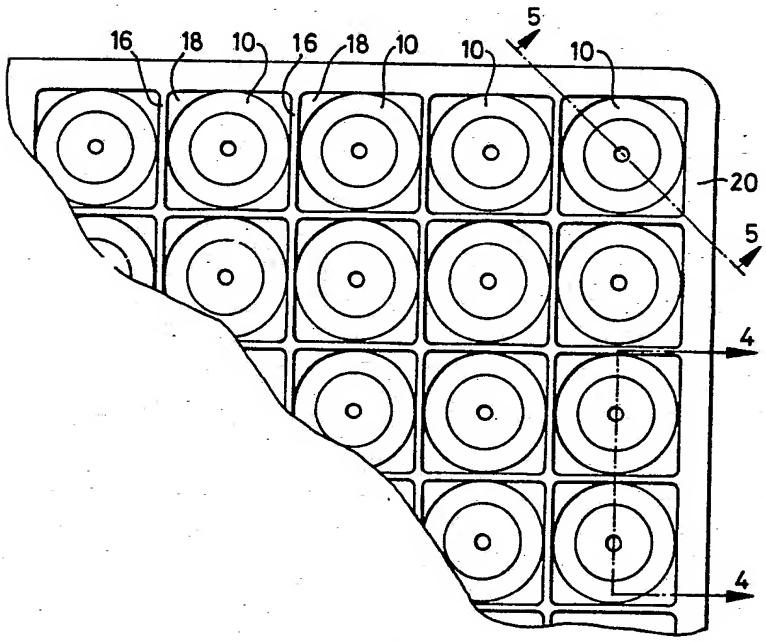

Fig. 1

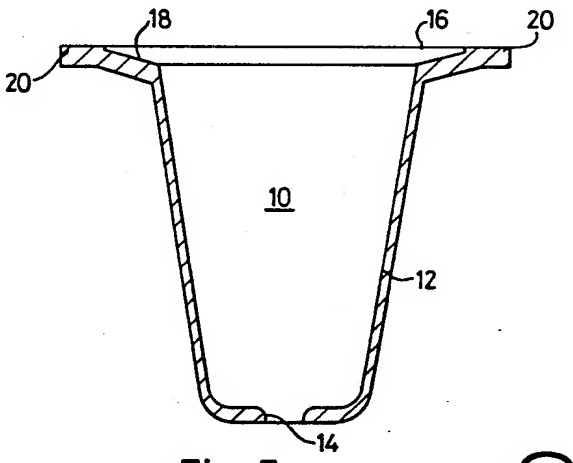

Fig. 5

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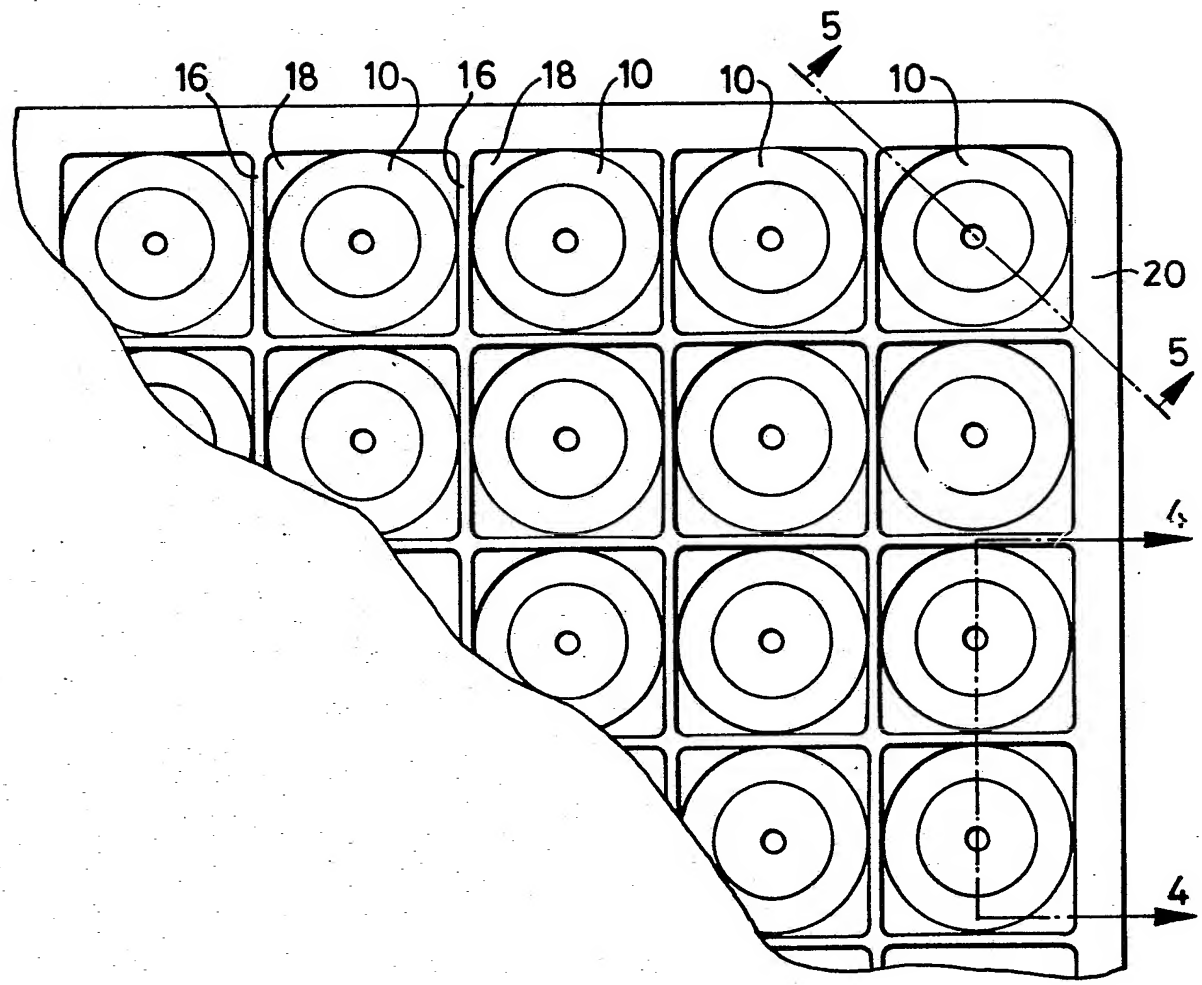

Fig.1

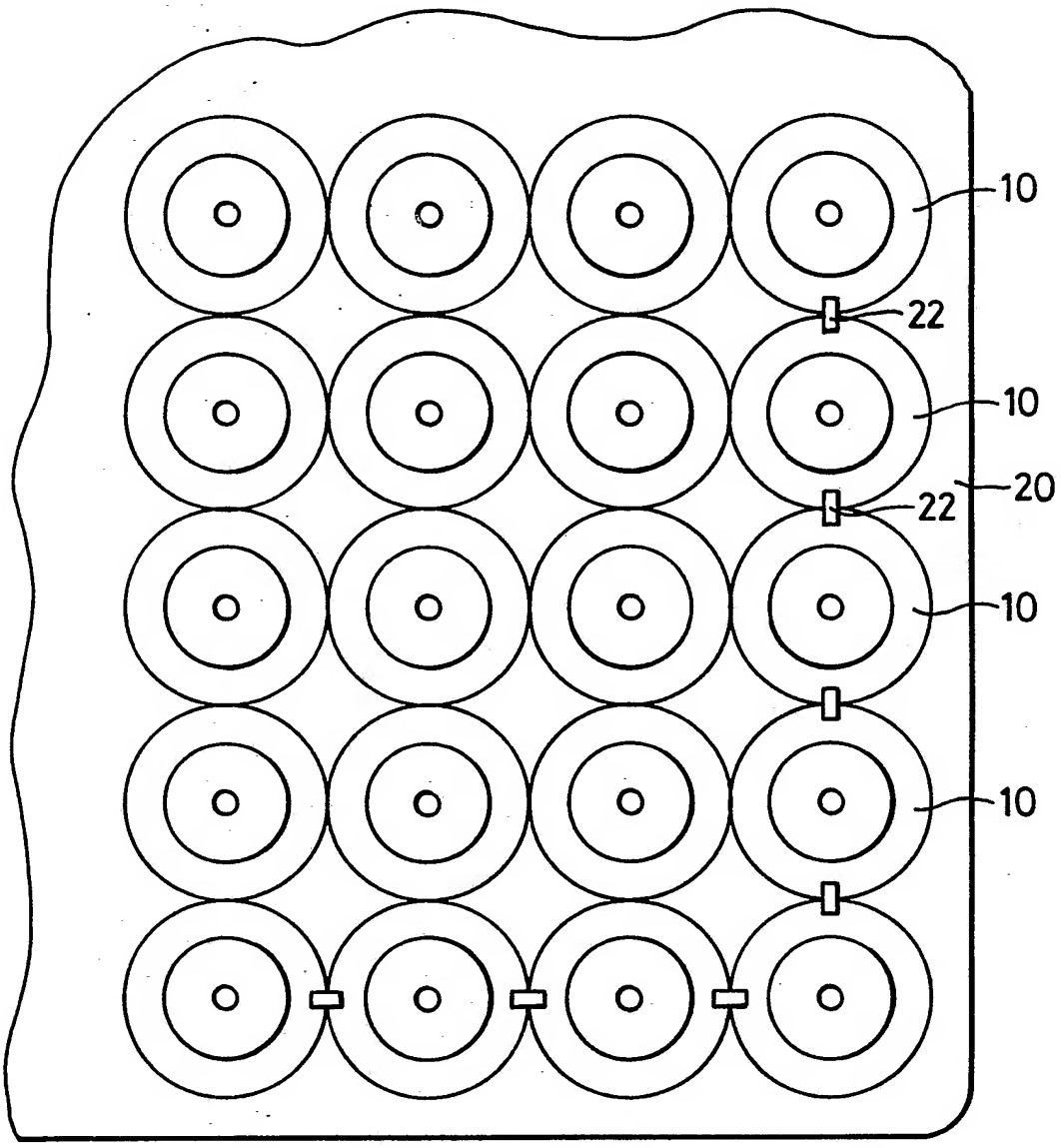

Fig. 2

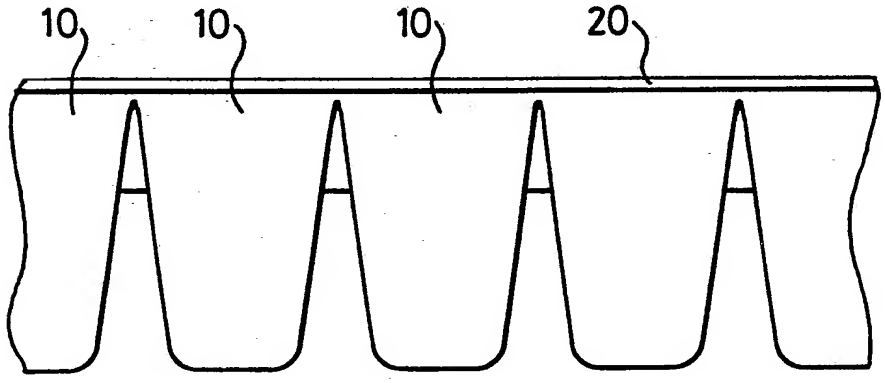

Fig. 3

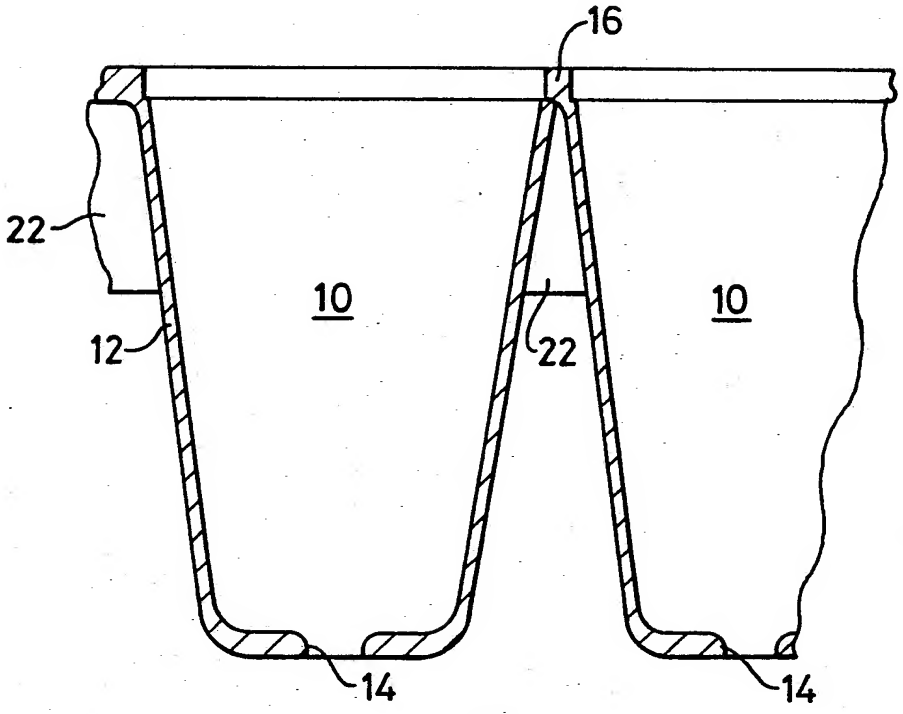

Fig. 4

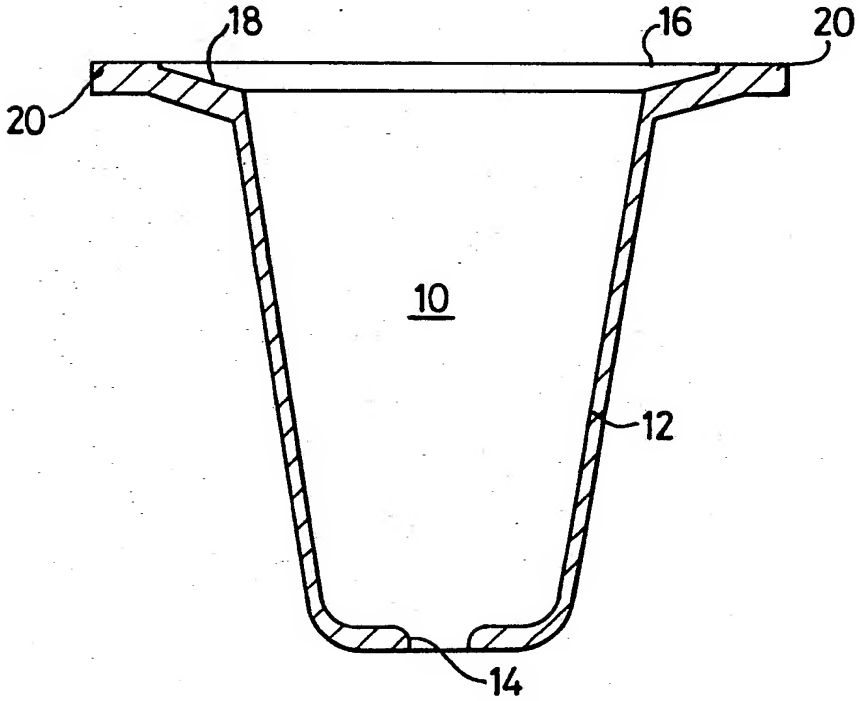

Fig. 5

Horticultural Propagation Tray

This invention relates to trays for horticultural use in the propagation of plants from seed, more particularly to trays of the multi-cell type in which seeds are propagated individually in a respective cell containing a compost or other growing medium.

This method of propagation is coming into increasing favour as it ensures that each seedling plant can develop separately and receive proper watering and nutrition without overcrowding. Moreover transplanting for growing on is more convenient with substantially reduced disturbance and damage to the rooting system of the plant. Commercial growers use trays of this type for large scale production in conjunction with automatic equipment for sowing the seeds therein.

Known trays of this type have generally been either vacuum formings of sheet plastics material or block-like mouldings of relatively thick expanded polystyrene. The latter material has low durability, trays made from it are easily damaged and are often not re-usable. The vacuum formed trays are somewhat more durable and easy to handle but the shaping which can be provided by this

process is limited, it is difficult to maintain uniform thickness of the plastics material, and areas of localised weakness occur particularly at the edges of the tray which are added to by the general lack of rigidity particularly when the tray is fully loaded.

Another a disadvantage of known patterns of tray is that the interior walls defining the cells may not have a sufficiently smooth finish to facilitate the release of the seedling plant and accompanying mass of root supporting growing medium when transplanting, which delays the transplanting process and increases the risk of damage to the root system of the plant.

The object of the present invention is to provide a multi-cell propagating tray which is economical in that it is particularly durable and will thus have a long service life, which is particularly strong and rigid to facilitate safe and convenient handling particularly when loaded, which facilitates speedy and effective watering of the growing seedlings, and which may further facilitate the eventual transplanting process.

According to the invention there is provided a multi-cell propagating tray comprising or consisting of a unitary moulding of plastics material defining the cells each of which is shaped as a downwardly tapered conical pot whose major lower portion is of circular cross-section but having a square upper-

most rim formation of uniform width common to adjoining cells so forming a rectangular grid or lattice locating the cells, an upper or mouth portion of each cell being shaped to provide a shallow dished downward transition from the square rim to said circular section lower portion.

Preferably the tray is a single injection moulding of plastics material and it includes generally vertical strengthening webs interconnecting at least upper parts of at least some adjacent pairs of cell pots, e.g. of those ranks and files of cells forming the outermost borders of the tray to add to its rigidity.

The edges of the tray may include a border frame or skirt of greater cross-sectional area or depth than the cell rims within said frame, again to facilitate handling and give increased rigidity.

At least the interior wall surfaces of the cells may be moulded to provide a smooth or polished surface finish to facilitate removal of seedling plants and medium when transplanting or emptying the tray.

An example of the invention is illustrated in the accompanying drawings wherein

Figure 1 is a plan view of a corner portion of a multi-cell tray (remainder broken away);

Figure 2 is an inverted plan view of the corner portion;

Figure 3 is a side elevation of part of the tray;

Figure 4 is a section on line 4-4 of figure 1; and

Figure 5 is a section on line 5-5 of figure 1

While it is to be understood that trays of various sizes and capacities may be provided the example shown is dimensioned to be compatible with existing filling and handling equipment, its overall dimensions are 628mm long x 404mm wide x 40mm in overall depth containing 380 cells arranged in ranks of 22 and files of 14.

Each cell 10 is shaped as best seen in figures 4 and 5 comprising a downwardly tapered conical pot 12 having a drain hole 14 in its base, its major lower portion being of circular cross-section.

Each cell has a square uppermost rim 16 and an upper portion or mouth 18 shaped to provide a shallow dished downward transition from the square rim 16 to the circular section lower portion.

Rims 16 are common to adjoining cells in that they form a co-planar rectangular grid or lattice locating the cells and extending continuously in

straight lines between the ranks and files across the whole area bounded by a wider border portion 20 forming the edges of the tray.

As the tray is formed as a unitary injection moulding the thickness of the material can be closely determined to provide rigidity and strength as needed.

To give additional rigidity in this example to the border areas of the tray immediately adjoining rim portion 20 the four outermost ranks and files of cells 10 are provided with vertical strengthening webs 22 interconnecting upper regions of the exterior walls of the adjoining pairs of cells extending to the undersurface of the common rim 16 between them, these webs assisting in resisting any tendency of the loaded tray to sag when supported by its opposite side edges. It is contemplated that further like webs may be added in other regions of the tray or, indeed, between all the cells if desired.

The interior wall surfaces of each cell may be moulded with a smooth or polished finish which, together with the tapered shape of the cells, will facilitate removal of the individual seedling plants together with the ball or mass of compost or other growing medium in which they are rooted, thus minimising damage and disturbance to the root system on transplanting.

On filling the cells, the growing medium is preferably levelled with the upper surface of the rims 16 so that there is an exposed square field of medium topping each cell, only the narrow rims 16 being visible between the filled cells. In this way, on watering the tray, practically all the water immediately reaches the medium upper surfaces so ensuring even distribution of the water and its most effective absorption.

The border portion 20 may be formed in various profiles and sections to provide the desired rigidity and appearance, for example it may be of increased thickness as well as width compared with the rims 16 and/or it may be provided with a downwardly extending skirt on its outermost periphery. Said rim portion could also be shaped to provide hand holds or handles to facilitate carrying and/or locations for facilitating stacking or mechanical or automated handling or transfer.

CLAIMS

1. A multi-cell propagating tray comprising or consisting of a unitary moulding of plastics material defining the cells each of which is shaped as a downwardly tapered conical pot whose major lower portion is of circular cross-section but having a square uppermost rim formation of uniform width common to adjoining cells so forming a rectangular grid or lattice locating the cells, an upper or mouth portion of each cell being shaped to provide a shallow dished downward transition from the square rim to said circular section lower portion.

2. A tray as in Claim 1 being a single injection moulding of plastics material.

3. A tray as in Claim 1 or 2 including generally vertical strengthening webs interconnecting at least upper parts of at least some adjacent pairs of cell pots.

4. A tray as in Claim 3 wherein said webs interconnect those ranks and files of cells forming the outermost borders of the tray.

5. A tray as in any preceding claim whose edges include a border frame or skirt of greater cross-sectional area or depth than the cell rims within said frame.

6. A tray as in any preceding claim wherein the interior wall surfaces of the cells are moulded to provide a smooth or polished surface finish.

7. A tray as in any preceding claim which is 628mm long x 404mm wide x 40mm in overall depth.

8. A tray as in any preceding claim containing 380 cells arranged in ranks of 22 and files of 14.

9. A multi-cell propagating tray substantially as hereinbefore described with reference to and as shown in

the accompanying drawings.

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